

What is claimed:

1. A biomedical electrode comprising a conductor in contact with a conductive medium, wherein the conductor comprises an electrically conductive surface comprising an active source of silver and the conductive medium is associated with a peroxide scavenger.
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2. The biomedical electrode of claim 1 wherein the electrically conductive surface further comprises a polymer film associated with the silver, the silver being in a form selected from the group consisting essentially of metallic silver, silver chloride or combinations of the foregoing.
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3. The biomedical electrode of claim 2 wherein the conductive surface comprises a graphite loaded polymer.
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4. The biomedical electrode of claim 1 further comprising a non-conductive backing having a first side comprising a first major surface and a second side comprising a second major surface; the electrically conductive surface associated with the second major surface of the non-conductive backing; and the conductive medium comprising an electrically conductive pressure sensitive adhesive associated with the conductive substrate, the electrically conductive pressure sensitive adhesive comprising the at least one peroxide scavenger.
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5. The biomedical electrode of claim 4 wherein the electrically conductive surface further comprises a polymer film associated with the silver, the silver being in a form selected from the group consisting essentially of metallic silver, silver chloride or combinations of the foregoing.
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6. The biomedical electrode of claim 4 wherein the electrically conductive pressure sensitive adhesive comprises a substantially non-porous, bicontinuous structure resulting from components comprising water, free radically (co)polymerizable
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ethylenically unsaturated polar hydrophilic or amphiphilic monomers or oligomers, optional water soluble initiator, and optional water soluble additive.

- 5 7. The biomedical electrode of claim 6 wherein the peroxide scavenger has at least one atom selected from the group consisting of sulfur, selenium, and tellurium.
8. The biomedical electrode of claim 7 wherein the peroxide scavenger is selected from the group consisting of methionine, thiodipropionic acid, and dilauryl thiodipropionate and mixtures of the foregoing.
- 10 9. The biomedical electrode of claim 8 wherein electrically conductive pressure sensitive adhesive comprises the peroxide scavenger in an amount of at least 0.01 percent by weight of the electrically conductive pressure sensitive adhesive.
- 15 10. The biomedical electrode of claim 8 wherein the peroxide scavenger is present in an amount between about 0.01 percent and 5 percent by weight of the conductive adhesive.
- 20 11. The biomedical electrode of claim 4 wherein the non-conductive backing further comprises a tab portion and a pad portion, the first major surface and second major surface shared by the tab portion and the pad portion, at least a portion of the electrically conductive pressure sensitive adhesive being disposed over the second major surface on the pad portion, the electrically conductive pressure sensitive adhesive associated with the electrically conductive surface on the pad portion.
- 25 12. The biomedical electrode of claim 11 further comprising a first field and second field of non-conductive adhesives associated with the electrically conductive surface on the pad portion.
- 30 13. The biomedical electrode of claim 11 further comprising a release liner disposed over the electrically conductive adhesive.

14. The biomedical electrode of claim 4 wherein the electrically conductive pressure sensitive adhesive is formulated from components comprising acrylic acid, polyoxyethylene acrylate, isooctyl acrylate, surfactant, propylene glycol, and polyacrylic acid having a molecular weight of approximately 550,000.
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15. The biomedical electrode of claim 1 wherein the conductor comprises a graphite loaded polymer in the form of a stud upon the outer surface of which is disposed a layer of partially chlorided silver.
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16. A biomedical electrode comprising:
A non-conductive backing having a first side comprising a first major surface and a second side comprising a second major surface;
An electrically conductive surface associated with the second major surface of the non-conductive backing; and
15 An electrically conductive pressure sensitive adhesive associated with the electrically conductive surface, the electrically conductive pressure sensitive adhesive comprising a peroxide scavenger.
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17. The biomedical electrode of claim 16 wherein the electrically conductive surface comprises silver.
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18. The biomedical electrode of claim 17 wherein electrically conductive surface further comprises a polymer film associated with the silver, the silver being in a form selected from the group consisting essentially of metallic silver, silver chloride or combinations of the foregoing.
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19. The biomedical electrode of claim 16 wherein the electrically conductive pressure sensitive adhesive comprises a substantially non-porous, bicontinuous structure resulting from components comprising water, free radically (co)polymerizable ethylenically unsaturated polar hydrophilic or amphiphilic monomers or oligomers, optional water soluble initiator and optional water soluble additive.

20. The biomedical electrode of claim 19 wherein the peroxide scavenger has at least one atom selected from the group consisting of sulfur, selenium, and tellurium.
- 5 21. The biomedical electrode of claim 20 wherein the peroxide scavenger is selected from the group consisting of methionine, thiodipropionic acid, and dilauryl thiodipropionate and mixtures of the foregoing.
- 10 22. The biomedical electrode of claim 21 wherein the peroxide scavenger is present in an amount of at least 0.01 percent by weight of the electrically conductive pressure sensitive adhesive.
- 15 23. The biomedical electrode of claim 21 wherein the peroxide scavenger is present in an amount between about 0.01 percent and 5 percent by weight of the electrically conductive pressure sensitive adhesive.
- 20 24. The biomedical electrode of claim 16 wherein the non-conductive backing further comprises a tab portion and a pad portion, the first major surface and second major surface shared by the tab portion and the pad portion, at least a portion of the electrically conductive surface being disposed over the second major surface on the pad portion, and the electrically conductive pressure sensitive adhesive associated with the electrically conductive surface on the pad portion.
- 25 25. The biomedical electrode of claim 24 further comprising a first field and second field of non-conductive adhesives associated with the electrically conductive surface on the pad portion.
26. The biomedical electrode of claim 24 further comprising a release liner disposed over the electrically conductive pressure sensitive adhesive.
- 30 27. The biomedical electrode of claim 16 wherein the electrically conductive pressure sensitive adhesive is formulated from components comprising acrylic acid,

polyoxyethylene acrylate, isooctyl acrylate, surfactant, propylene glycol, and polyacrylic acid having a molecular weight of approximately 550,000.

28. A method for preparing a biomedical electrode, comprising the steps of:
5 preparing a subassembly comprising a non-conductive backing having a first side comprising a first major surface and a second side comprising a second major surface and an electrically conductive surface on the second major surface of the non-conductive backing, the electrically conductive surface comprising silver; and
10 applying a conductive medium to the electrically conductive surface of the subassembly, the conductive medium comprising a peroxide scavenger.
29. The method according to claim 28 wherein applying a conductive medium comprises formulating an electrically conductive pressure sensitive adhesive comprising the peroxide scavenger and applying the electrically conductive
15 pressure sensitive adhesive to the electrically conductive surface.
30. The method according to claim 29 wherein formulating an electrically conductive pressure sensitive adhesive comprises formulating the adhesive to comprise a substantially non-porous, bicontinuous structure resulting from components
20 comprising water, free radically (co)polymerizable ethylenically unsaturated polar hydrophilic or amphiphilic monomers or oligomers, optional water soluble initiator, optional water soluble additive and peroxide scavenger.
31. The method according to claim 30 wherein the peroxide scavenger has at least one
25 atom selected from the group consisting of sulfur, selenium, and tellurium.
32. The method according to claim 31 wherein the peroxide scavenger is selected from the group consisting of methionine, thiodipropionic acid, and dilauryl thiodipropionate.
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33. The method according to claim 32 wherein the peroxide scavenger is present in an amount of at least 0.01 percent by weight of the conductive medium.

34. The method according to claim 32 wherein the agent is present in an amount between about 0.01 percent and 5 percent by weight of the conductive medium.
- 5 35. The method according to claim 29 wherein formulating an electrically conductive pressure sensitive adhesive comprises formulating the adhesive from components, the components comprising acrylic acid, polyoxyethylene acrylate, isooctyl acrylate, surfactant, propylene glycol, and polyacrylic acid having a molecular weight of approximately 550,000.
- 10 36. The method according to claim 28 wherein preparing a subassembly further comprises applying a silver containing ink to the second major surface of the non-conductive backing to provide the electrically conductive surface.
- 15 37. The method according to claim 36 wherein the silver is provided in a form selected from the group consisting of metallic silver, silver chloride, or combinations thereof.